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The Honorable Michelle K. Lee Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office

Via Email to 101Roundtable2@uspto.gov

Dear Director Lee:

I write to submit written comments in response to the *Notice of Roundtables and Request for Comments Related to Patent Subject Matter Eligibility*.¹ In particular, I am providing written comments regarding the topics addressed by Roundtable 2 related to patent subject matter eligibility under 35 U.S.C. § 101.

I write in my own capacity as a law professor. My comments today reflect my own views after significant practical experience and academic study related to the issue of patent eligibility. Prior to joining the SMU Dedman School of Law, I clerked for now-Chief Judge Prost of the United States Court of Appeal for the Federal Circuit, and I worked as a patent attorney at the law firm of Baker Botts LLP in its intellectual property section. In practice, my work focused primarily on patent prosecution, patent litigation, and intellectual property licensing for a variety of clients whose businesses included diverse technologies. Since joining the law school, I have continued to practice law in a consulting role. I have also served as an expert witness in patent infringement litigation, and I am currently a member of the Advisory Council for the U.S. Court of Appeals for the Federal Circuit. I have taught various patent law-focused courses including Patent Law, Advanced Topics in Intellectual Property, and Patent Law and Institutional Choice. Most relevant to today's comments, my recent research has focused on the law of patent eligibility. I am in the process of publishing two law review articles on the topic,2 and I am also in the process of conducting a survey of venture capitalists regarding the effects of the Supreme Court's eligibility decisions on their investment decisions. I am a frequent speaker on patent law topics, including the topic of patent eligibility. And for the last two years I have served as an ex officio member and the Reporter for the American Intellectual Property Law Association's Patentable Subject Matter Task Force. I note, however, that my comments today reflect my own views and not those of any other person or organization.

 1 Fed. Reg. (Oct. 17, 2016), available at https://www.gpo.gov/fdsys/pkg/FR-2016-10-17/pdf/2016-24888.pdf.

² For more details and support regarding many of the views I express here, as well as for additional relevant discussion, I refer you to these articles. *See* David O. Taylor, *Confusing Patent Eligibility*, 84 TENN. L. REV. (forthcoming), *available at* http://ssrn.com/abstract=2754323 (draft); David O. Taylor, *Amending Patent Eligibility*, 50 U.C. DAVIS L. REV. (forthcoming), *available at* http://ssrn.com/abstract=2853700 (draft).



I. Background

Section 101 eligibility jurisprudence has devolved into something approaching chaos. The law governing patent eligibility is currently experiencing a crisis of confusion. Specifically, the Supreme Court's now-familiar two-part test for eligibility—introduced in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*³ and set forth explicitly in *Alice Corp. v. CLS Bank International* ⁴—confuses the relevant policy concerns underlying various patent law doctrines and also lacks administrability. There are no objective guidelines, in particular, to help a patent examiner or judge determine what a patent claim is "directed to," as well as what constitutes an abstract idea or an inventive concept. Moreover, there is concern that the two-part test substantially reduces incentives to invest in research and development in important areas of technology, including both health-related and computer-related inventions. Given the confusion, lack of administrability, and risk of under-investment in research and development, the time has come to consider whether Congress should amend § 101. For more details regarding the confusing state of the current law governing patent eligibility, please see my article *Confusing Patent Eligibility*.⁵

In my view Congress should amend the patent statute to clarify the law governing patent eligibility. Congress should do so because the Supreme Court is the cause of the current confused status of eligibility law, and it is highly unlikely that the Court will act to correct the problems it has introduced into the law. The Court has heard eight cases addressing patent eligibility in the last forty years—more than any other substantive area of patent law—and yet it has failed to develop a workable test governing the issue. The Court in Alice, furthermore, not only rejected calls to abandon the problematic two-part test introduced in Mayo, but also extended the reach of that two-part test to all of the judicial exceptions to patent eligibility (laws of nature, natural phenomena, and abstract ideas).⁶ In Kimble v. Marvel Enterprises, moreover, the Court indicated that it would likely rely upon stare decisis to reject pleas to overturn the two-part test articulated in Alice.⁷ And most recently the Court denied certiorari in Ariosa Diagnostics, Inc. v. Sequenom, Inc., a case not

Mayo Collaborative Servs. v. Prometheus Labs., Inc., 132 S. Ct. 1289 (2012).

⁴ Alice Corp. v. CLS Bank Int'l, 134 S. Ct. 2347 (2014).

David O. Taylor, *Confusing Patent Eligibility*, 84 TENN. L. REV. (forthcoming), *available at* http://ssrn.com/abstract=2754323 (draft).

⁶ Alice Corp., 134 S. Ct. at 2355 (describing the two-part test as "a framework for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts").

⁷ See generally Kimble v. Marvel Entm't, LLC, 135 S. Ct. 2401 (2015). While the Court applied *stare decisis* as a basis not to overturn its precedent on a matter of patent misuse law, the Court explicitly tied its analysis to its precedent on eligible subject matter. *Id.* at 2407 (stating that the Court had "carefully guarded [the] cut-off date, just as it has the patent law's subject matter limits: In case after case, the Court has construed those laws to preclude measures that restrict free access to formerly patented, as well as unpatentable, inventions").



only highlighting the perverse result of the Court's two-part test, but also demonstrating the Court has no desire even to consider calls to clarify the law in the face of lower court judges' confusion. In short, the Court appears unable or unwilling to develop an appropriate test. Given the broad power granted to Congress under the Constitution, however, the Court would likely defer to Congress and find legislation clarifying eligibility law to be constitutional.

A rigorous analysis of the need for particular legislation should begin with an analysis of whether the existing patent statute already addresses the concerns raised by the Supreme Court in its cases addressing eligibility. On the one hand, the existing relevant statutory provisions include the subject matter, utility, novelty, non-obviousness, written description, enablement, and definiteness requirements, the limit on functional claiming, the limited term of patents, and the existing statutory experimental use exception to infringement liability. On the other hand, the relevant concerns include claim breadth, abstractness, inadequate disclosure, and preemption of the basic building blocks of human The reality is that the existing statutory provisions already, without ingenuity. amendment, address the Court's concerns. For example, the existing doctrines of nonobviousness, written description, and enablement already address concerns with the breadth of patent claims. Likewise, the utility, written description, and definiteness requirements, as well as the limit on functional claiming, already address concerns with abstractness and inadequate disclosure. Moreover, concern regarding preemption of the basic building blocks of human ingenuity—the concern primarily emphasized in Alice9 ignores the utility, enablement, and written description requirements, the limited terms of patents, and the existing experimental use exception. But even if these existing statutory provisions do not address the relevant concerns, the appropriate first step is for Congress to consider amending those provisions rather than developing a new, parallel doctrine of eligibility to address the same concerns. Having conducted this analysis myself, my most significant suggestion is to codify a more robust experimental use exception to infringement liability to address more completely the Supreme Court's concern with preemption of the basic building blocks of human ingenuity. 10

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⁸ See generally Ariosa Diagnostics, Inc. v. Sequenom, Inc., 788 F.3d 1371 (Fed. Cir. 2015) (panel decision); *id.* at 1380-81 (Linn, J., concurring); Ariosa Diagnostics, Inc. v. Sequenom, Inc., 809 F.3d 1282, 1284-87 (2015) (Lourie, J., concurring in the denial of en banc rehearing); *id.* at 1287-93 (Dyk, J., concurring in the denial of en banc rehearing); *id.* at 1293-94 (Newman, J., dissenting from the denial of en banc rehearing); Denial of Certiorari, Sequenom, Inc. v. Ariosa Diagnostics, Inc., No. 15-1182, 2016 WL 1117246 (U.S. June 27, 2016).

⁹ Alice Corp., 134 S. Ct. at 2354 ("We have described the concern that drives this exclusionary principle as one of pre-emption.").

¹⁰ For details regarding this proposal, see David O. Taylor, *Amending Patent Eligibility*, 50 U.C. DAVIS L. REV. (forthcoming), *available at* http://ssrn.com/abstract=2853700 (draft). Another potential improvement to an existing statutory provision might include amending the utility requirement to require that patent *claims* describe utility. *See id.* ("Rather than merely require the inventor to describe a practical application *in the specification*, which is already a feature of the enablement requirement, the utility requirement in § 101 might require the inventor to describe the practical application *in the claim.*").



If Congress were to do more than amend these existing statutory provisions and, in particular, if it were to consider adding language to the patent statute to address eligibility, I believe there are certain governing principles that should guide Congress. Those governing principles are broad eligibility, clarity, constraint on judicial intervention, and flexibility (in the sense that the law should be able to be applied meaningfully to new, unforeseen, and even unimagined human activities). Using these governing principles, I have analyzed potential approaches to amending the patent statute to codify an appropriate test governing patent eligibility, and some approaches present significantly more promise than others.

The more promising approaches, discussed in more detail below, include eliminating the judicial exceptions to eligibility and codifying a standard to govern eligibility that includes appropriate objective limitations. The less promising approaches, again discussed in more detail below, include a technological arts requirement and the current European approach of listing specific categories of ineligible subject matter. Regardless of which approach is adopted, however, the adopted approach ought to seek to ensure the incentive to invent and the incentive to disclose inventions through the filing of patent applications. In my view, again regardless of which approach is adopted, the best way to achieve these twin goals is to amend the patent statute to overturn the current two-part test for patent eligibility in favor of codification of a different, appropriate test.

II. More Promising Approaches

Two legislative approaches appear more promising in terms of their ability to ensure broad eligibility, clarity, constraint on judicial intervention, and flexibility.

A. Eliminating the Judicial Exceptions to Eligibility

Given the ability of the existing statutory provisions to address the concerns identified by the Supreme Court, one promising approach is to eliminate the judicial exceptions to eligibility. At the same time, as discussed above, Congress might draft more clear language in the remainder of the patent statute to address any policy concerns not already addressed adequately by the remaining statutory provisions. If Congress eliminated the judicial exceptions, and in particular the misguided search for an inventive application, it would be similar to the approach taken in the Patent Act of 1952, when Congress eliminated the separate "invention" requirement. Likewise, to correct the problems with the modern eligibility requirement, Congress might eliminate the eligibility requirement in § 101 in favor of the statutory provisions included in the remainder of the patent statute. As discussed above, this approach might include codification of a more robust experimental



use exception to infringement liability to address the Supreme Court's concern with preemption of the basic building blocks of human ingenuity.¹¹

Depending upon its implementation, the elimination of the judicial exceptions would be consistent with the principles of broad eligibility, clarity, constraint on judicial intervention, and flexibility. First, the elimination of the question of whether the claimed invention includes an inventive concept would ensure broader eligibility. Second, the elimination of duplicative standards would, in and of itself, increase clarity with respect to the patent statute. Of course, any amendment to the existing patentability and specification requirements in §§ 102, 103, and 112 would need to be clear. Third, to ensure that the judiciary does not import into the analyses required by those remaining statutory sections its misguided common law regarding the displaced judicial exceptions, it would probably be necessary to include clear statements in the legislation, or even in the amended statute, that the judicial exceptions have been eliminated in favor of statutory patentability and specification requirements in §§ 102, 103, and 112. Fourth, this approach would revolve around expressing generally-applicable governing standards that would apply going forward to future technologies and, thus, satisfy the need for flexibility.

B. Codification of an Appropriate Standard with Objective Constraints

Another promising approach is to codify a standard to govern the issue of eligibility with appropriate, objectively-administrable constraints. In this regard, two standards appear particularly promising.

1. A Practical Application Test

One test that would provide objectively-administrable constraints on the eligibility analysis would focus on whether what is claimed is a practical application of a judicial exception (a natural law, physical phenomenon, or abstract idea). The current patent statute already includes fairly clear language on point. In particular, § 101 already expresses a "usefulness" requirement. The Supreme Court in *Brenner v. Manson* interpreted that language as requiring the claimed subject matter have a "specific" and "substantial" utility. Courts have since used "practical" and "substantial," in this context, to mean the same thing. In particular, the modern utility requirement requires a practical utility, which means "that that claimed invention has a significant and presently available benefit to the public." Thus, to express in the patent statute the relevant governing standard, the

If the elimination of the eligibility requirement eliminated the utility requirement in § 101, this approach should involve amending the enablement requirement in § 112 to make explicit the current implicit understanding that claims must describe something useful. *See In re Brana*, 51 F.3d 1560, 1564 (Fed. Cir. 1995) ("Obviously, if a claimed invention does not have utility, the specification cannot enable one to use it.").

¹² Brenner v. Manson, 383 U.S. 519, 534-35 (1966).

¹³ In re Fisher, 421 F.3d 1365, 1371 (Fed. Cir. 2005).



Supreme Court's holding in *Brenner v. Manson* needs only to be codified. The more important aspect of codifying this law, however, is eliminating the more strenuous and confusing requirement that the claims be directed to an "inventive concept" or an "inventive application" of a natural law, physical phenomenon, or abstract idea.

This approach—codifying courts' interpretation of the utility requirement and eliminating the search for an inventive concept—would comport with the principles of broad eligibility, clarity, constraint on judicial intervention, and flexibility. First, eliminating the search for an inventive application in favor of a requirement of a practical application would certainly broaden eligibility as compared to the current law. While the interpretation of the practical utility requirement to require a "substantial" or "significant" benefit to the public would not appear to extend eligibility to inventions having "any" benefit to the public—such that operability is not all that is required to show a practical utility—courts' application of this aspect of the utility requirement has not proven to be unduly stringent. Second, the law governing the requirement of a practical application has not proven to be unworkable; it is likely sufficiently clear. Third, to meet the principle of restraint on judicial intervention, any amendment to articulate a standard focusing on practical utility may need to include additional language explaining that the requirement—the claimed subject matter be a practical, as opposed to an inventive, application of a natural law, physical phenomena, or abstract idea—is the only eligibility requirement beyond the subject matter requirement. (The subject matter requirement is the requirement that a claim describe one of the listed categories of eligible inventions: a process, machine, manufacture, or composition of matter, or an improvement thereof.) Fourth, a standard focusing on practical utility would provide a workable standard independent of technology areas and would, thus, be appropriate for application to new and unforeseen technologies.

I understand that at least one commentator has criticized a practical application test as merely "reprising" the utility requirement. This criticism is misplaced. It is helpful to codify a correct interpretation of the utility requirement, particularly when that interpretation addresses concerns raised by the Supreme Court. Moreover, one appropriate approach to amending the eligibility requirement is to identify the wrong interpretation of the patent statute, while another appropriate approach is to identify the correct interpretation of the patent statute. The codification of a practical application requirement does both. It rejects the Court's recently-adopted inventive application requirement by replacing it with nearly the opposite test, the historical practical application requirement. In short, the adoption of a practical application requirement is particularly appropriate here when the Supreme Court has recently deviated from longstanding patent law principles to interpret the statutory text to require nearly the exact opposite of a practical application, an inventive application of a natural law, physical phenomena, or abstract idea. Moreover, as discussed above, the codification of the appropriate interpretation of the existing utility requirement would solve the problems of



confusion associated with the second part of the Supreme Court's current two-part test, which requires an inventive application of a judicial exception.

2. A Result of Human Effort Test

Another test that would provide objectively-administrable constraints on the eligibility analysis is one focusing on whether the claimed invention is the result of human effort. This test would codify the correct understanding of the subject matter requirement. The primary function of the subject matter requirement is to eliminate from eligibility anything that is not the result of human effort. In other words, for purposes of the subject matter requirement, eligibility extends to "anything under the sun made by man." Claims only to natural phenomena and natural laws are not eligible because those things are not the result of human effort. Given the Supreme Court's confusion of this aspect of § 101 in *Mayo* and *Alice*, Congress could insert this understanding of the subject matter requirement into the patent statute.

Notably, a test focusing on whether the claimed subject matter is the result of human effort may explain at least part of the Supreme Court's recent decision in *Association for Molecular Pathology v. Myriad Genetics, Inc.*¹⁶ Where an analysis focusing on human effort differs from the Supreme Court's recent approach to eligibility in *Mayo* and *Alice,* however, is that *any* human contribution to the natural law or phenomena would meet the subject matter requirement. A test asking whether the claimed invention is not the result of human effort, moreover, could be combined with a test asking whether the claimed invention is capable of being performed only in the human mind. This latter test may be particularly appropriate for process claims. Failing either test, a claimed invention would be ineligible for patenting.

A test asking whether the claimed invention is the result of human effort would be consistent with the principles of broad eligibility, clarity, constraint on judicial intervention, and flexibility. First, requiring human effort would not unduly constrain the breadth of eligibility. Any minimal human contribution to the claimed subject matter would render that subject matter eligible. Second, a requirement of human effort would provide a clear standard for patent examiners and courts to apply; either the claimed subject matter is the result of human effort or it is not. Third, to meet the principle of restraint on judicial intervention, any amendment to articulate a standard focusing on

Stated alternatively, the test for human effort may be expressed as whether the claimed invention as a whole is only subject matter as it exists in nature independently of, and prior to, any human activity.

¹⁵ S. REP. No. 82-1979 (1952), *as reprinted in* 1952 U.S.C.C.A.N. 2394, 2398-99. The Supreme Court misunderstands this statement from the legislative history of the Patent Act of 1952. *See* David O. Taylor, *Confusing Patent Eligibility*, 84 TENN. L. REV. (forthcoming), *available at* http://ssrn.com/abstract=2754323 (draft).

¹⁶ See generally Ass'n for Molecular Pathology v. Myriad Genetics, Inc., 133 S. Ct. 2107 (2013).



human effort would likely need to include additional language explaining that the requirement is the only subject matter requirement. Fourth, this approach would create a flexible standard applicable to new and unforeseen technologies. Regardless of whether the claimed invention is currently existing or yet unimagined, to be eligible the claimed invention would have to be the result of human effort.

I understand at least one commentator has criticized a result-of-human-effort test and the elimination of eligibility of processes capable of being performed only in the human mind as merely "reprising" the common law doctrine of inherent anticipation and the utility requirement. Again, however, this criticism is misplaced. It is helpful to codify correct interpretations of existing doctrines, particularly when those interpretations address concerns raised by the Supreme Court. Moreover, it is less than pellucid that the common-law doctrine of inherent anticipation invalidates claims covering only newly-discovered yet naturally-occurring phenomena allegedly disclosed inherently in prior art.¹⁷

For more details regarding these more promising approaches to solving the problems with the current eligibility requirement, please see my article *Amending Patent Eligibility*. ¹⁸

III. Less Promising Approaches

Two approaches appear less promising in terms of their ability to ensure broad eligibility, clarity, constraint on judicial intervention, and flexibility.

A. A Technological Arts Requirement

I am aware that some commentators have advocated for a "technological arts" or "field of technology" requirement. These advocates, however, have trouble identifying exactly what qualifies as part of the technological arts and, moreover, exactly what does not qualify as part of the technological arts. They likewise have trouble identifying exactly what is and is not a field of technology. In this regard, consider that the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) requires that "patents shall be available for any inventions, whether products or processes, in all fields of technology." ¹⁹ That provision is not necessarily meant to represent, much less does it usefully serve as, the test that patent examiners and courts should use to determine patent eligibility. Indeed, while the European Patent Convention (EPC) includes an article with a paragraph reciting that

¹⁷ See Schering Corp. v. Geneva Pharm., 339 F.3d 1373, 1377–78 (Fed. Cir. 2003) (discussing inherent anticipation).

David O. Taylor, *Amending Patent Eligibility*, 50 U.C. DAVIS L. REV. (forthcoming), *available at* http://ssrn.com/abstract=2853700 (draft).

Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), art. 27.1, available at https://www.wto.org/english/tratop_e/trips_e/t_agm3c_e.htm#5.



"European patents shall be granted for any inventions, in all fields of technology,"²⁰ it is telling that the very next paragraph of the same article includes a list indicating exactly what "shall not be regarded as inventions within the meaning" of the previous paragraph.²¹ In short, the language "fields of technology" does not provide a clear demarcation of what is and is not eligible for patenting.

Depending upon its implementation, a technological arts requirement might provide broader eligibility as compared to the current two-part test for eligibility. Such a new requirement, however, as indicated above, would not appear to provide clarity or constraint on judicial intervention. It would represent a new, malleable standard devoid of objective factors providing clarity and constraint regarding its application. Moreover, such a requirement likely would not be flexible. If it focuses on *existing* technological fields, for example, then by definition it may not be easy for a patent examiner or court to determine whether a *new* claimed invention falls within a technological field.

B. The European Approach

As discussed, the approach of the European Patent Convention (EPC) is to compare a claimed invention with a codified list of exclusions from eligibility.²² I call this the "laundry list" approach. Adopting this approach in the United States would involve amending the patent statute to identify subject matter that is ineligible for patenting. What I consider here is not the possibility that Congress adopt each exception listed in the EPC, but instead the idea that Congress consider listing explicit exceptions to eligibility, whatever they should be, based on its own assessment of the governing policies and unique concerns associated with each potential exception. Congress would effectively decide in advance what subject matter is eligible and ineligible, rather than provide a rule or standard for patent examiners and judges to apply in the future. Importantly, however, the European approach limits the applicability of each codified exception to situations where the exception is claimed "as such."²³

Such an approach, depending upon its implementation, might comport with the principles of broad eligibility, clarity, and constraint on judicial intervention. First, if Congress included few and narrow exceptions to eligibility, the principle of broad eligibility would be furthered. Second, this approach would likely score high on the index of clarity, at least for existing technologies, because Congress would confront and resolve arguments about categories of technology that should be ineligible for patenting. Congress would need only

²⁰ Convention on the Grant of European Patents, Oct. 5, 1973, 1065 U.N.T.S. 254 (European Patent Convention), art. 52(1), available at https://www.epo.org/law-practice/legal-texts/html/epc/2016/e/ar52.html.

²¹ *Id.* art. 52(2).

²² *Id.*

²³ *Id.* art. 52(3).



to express its conclusions in clear terms. Third, Congress could constrain judicial intervention using this approach by including a qualification similar to the one in the EPC limiting the exception to situations where the exception is claimed "as such." In other words, *anything* added to a natural law—essentially claiming any practical application of a natural law—would be eligible for patenting. In addition to this qualification, however, to avoid the perpetuation of the judicial exceptions or the creation of additional judicial exceptions, a provision would likely need to be included indicating that the only exceptions to eligibility are those listed expressly in the statute. This type of provision would also help increase certainty with respect to future technologies; rightly or wrongly from the perspective of policy, future technologies would be eligible because they would not be identified in the list of excluded subject matter.

Where this laundry list approach does not fare well, however, is the principle of flexibility. By definition, this approach would not expressly contemplate specific *future* technologies; Congress would confront and resolve disputes over the eligibility of only *existing* technologies. It seems highly unlikely that Congress would confront and resolve arguments concerning the eligibility of every new technology.

IV. Conclusion

Developments in patent-eligibility law should not be left primarily to the courts. The Supreme Court has shown its inability or unwillingness to identify an appropriate, workable standard for patent eligibility. The Federal Circuit is constrained by the current two-part test that is confusing, lacks administration, and risks under-investment in research and development. And district courts lack the ability to apply the two-part test with any consistency or predictability, let alone change it. In short, the time has come for an administrative initiative to craft an appropriate test for patent eligibility. The President and Congress should enact into law an amendment to the patent statute to clarify the law of patent eligibility, and the United States Patent and Trademark Office should support if not lead efforts to make this happen.

Sincerely,

David O. Taylor

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